



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,961	08/31/2001	Bruno P.B. Lequesne	DP-304183	1539

7590 04/23/2003

DELPHI TECHNOLOGIES, INC.
Legal Staff, Mail Code: 482-204-450
1450 W. Long Lakem
P.O. BOX 5052
Troy, MI 48098

EXAMINER

LEYKIN, RITA

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 04/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/943,961	LEQUESNE ET AL.	

Examiner	Art Unit	
Rita Leykin	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-27 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____.
2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> .	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 2, 5-8, 10, 11, 14-17, 19, 20, 23-25 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Jung US # 6,411,060.

With respect to claims 1, 2, 8, 10, 11, 19, 20 and 26, Jung discloses driving device for a Switched Reluctance (SR) Motor, wherein at an initial stage of starting of switched reluctance motor, microprocessor sequentially outputs a plurality of control signals, thereby aligning the rotor. Wherein, the plurality of transistors are at an ON state for a sufficient time according to the control signals, so that the rotor can be pulled to a silent pole of the stator, in other words holding position. And wherein, the microprocessor sequentially outputs the control signals in consideration of the rotational

direction of the rotor after starting the SR motor, (see abstract and column 7, lines 30-48).

With respect to claims 5-7, 14-17 and 23-25, Jung does not teach excitement sequence of specifically second phase of the motor or third phase of the motor.

However, Jung teaches a microprocessor for sequentially outputting a plurality of control signals at an initial stage of the starting of the SR motor and sequentially outputting plurality of control signals according to the detected position after starting SR motor, wherein the plurality of transistor switches of the driving circuit is being switched by the plurality of control signal. It is the examiner position that claimed sequential phase excitation is inherent in the Jung teaching.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 3, 4, 9, 12, 18 and 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jung US # 6,411,060 and McCann US # 6,075,332.

The limitations of the independent claims 1, 10 and 19 have been discussed in the paragraph above.

Jung does not teach minimizing current or heating losses. Jung also does not teach means for determining motor torque.

However, McCann teach that higher motor current results in lower operational efficiency and greater thermal heating. Modifying the conduction angles and providing the adequate minimum amount of required time response can achieve the greater motor efficiency. Wherein, the optimum conduction angles can be determined by using a predictive signal processing techniques to estimate motor torque that will be commanded. McCann discloses a predictive conductive angle motor control system for the brake-by-wire application. Wherein, McCann introduces predictive techniques, to estimate the value of the motor torque request, (see column 1, lines 62-67 and column 2, lines 1-18 and column 6, lines 47-65).

Hence, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine teachings of Jung and McCann to provide a controlling current losses device in Switched Reluctance motors, by reducing period of application of the phase current according to the predicted torque.

The reason is to minimize current and heating losses in the motor phase.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rita Leykin whose telephone number is (703)308-5828. The examiner can normally be reached on Monday-Friday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on (703)308-3370.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Application/Control Number: 09/943,961
Art Unit: 2837

Page 5

Rita Leykin
Primary Examiner
Art Unit 2837

R.L.
April 18, 2003

Rita Leykin